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Building & Highway Material Testing Laboratory
An ISO 9001:2008 Certified Company
NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

Job No: CTCE/BBMP/W.No.69/KRIDL/CEMENT/2013-14 Date: 02.05.2014

TEST REPORT

CLIENT	:	Asst. Executive Engineer, Yelahanka Satellite Town Sub Division, BBMP, Bangalore.
AGENCY	:	Technical Manager (West), KRIDL, Bangalore.
NAME OF THE WORK	:	Improvements to Main and Cross Roads, Construction of drains in G. Ramaiah Layout in Attur Ward No.03 of Yelahanka Satellite Town Sub Division, BBMP, Bangalore.
REFERENCE	:	BBMP/AEE/YSSD/445/2013-14
SAMPLE ID	:	Cement
SAMPLES SUPPLIED BY	:	AGENCY

The results of the tests conducted on the cement sample are as follows:

Sl.No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 8112-1989
1	Standard Consistency	IS-4031 (Part -4)	29.00 %	-
2	a) Initial Setting Time	IS-4031 (Part -5)	135 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part -5)	480 Minutes	Not More than 600 Minutes
3	Soundness	IS-4031 (Part 3) by the Le-Chatelier method	1 mm	Not more than 10 mm

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Job No: CTCE/BBMP/W.No.03/KRIDL/SAND/2013-14 : 02.05.2014

TEST REPORT ON FINE AGGREGATES (SAND)
IS 383-1970 (RA- 2002)

Client : **Asst. Executive Engineer,** Yelahanka Satellite Town Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of Work : Improvements to Main and Cross Roads, Construction of drains in G. Ramaiah Layout to Attur Ward No.03 of Yelahanka Satellite Town Sub Division, BBMP, Bangalore.

Reference : BBMP/AEE/YSSD/445/2013-14

Date of Testing : 02.05.2014

Material : Sand

Total Wt. of Aggregates in gms: 2000

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits For Zone-II
10	0	0	0	100	100
4.75	90	4.50	4.50	95.5	90-100
2.36	206	10.30	14.80	85.2	75-100
1.18	385	19.25	34.05	66.0	55-90
600 Micron	421	21.05	55.10	44.9	35-59
300 Micron	585	29.25	84.35	15.7	8-30
150 Micron	226	11.30	95.65	4.4	0-10

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Job No: CTCE/BBMP/W.No.03/KRIDL/AGG/2013-14 : 02.05.2014

TEST REPORT ON COARSE AGGREGATES
IS 383-1970 (RA- 2002)

Client : Asst. Executive Engineer, Yelahanka Satellite Town Sub Division, BBMP, Bangalore.

Agency : Technical Manager (West), KRIDL, Bangalore.

Name of Work : Improvements to Main and Cross Roads, Construction of drains in G. Ramaiah Layout in Areas Ward No.03 of Yelahanka Satellite Town Sub Division, BBMP, Bangalore.

Reference : BBMP/AEE/YSSD/445/2013-14

Date of Testing : 02.05.2014

Material : 40mm Aggregates

Total Wt. of Aggregates in gms 25000

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits
80	0	0	0	100	100
40	995	3.98	3.98	96.02	95-100
20	16252	65.01	68.99	31.01	30-70
10	4985	19.94	88.93	11.07	10-35
4.75	1856	7.42	96.35	3.65	0-5

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Job No: CTCE/BBMP/W.No.03/KRIDL/STEEL/2013-14 03.05.2014

TEST REPORT ON REINFORCEMENT STEEL

Client	:	Asst. Executive Engineer, Yelahanka Satellite Town Sub Division, BBMP, Bangalore.
Agency	:	Technical Manager (West), KRIDL, Bangalore.
Name of the Work	:	Improvements to Main and Cross Roads, Construction of drains in G. Ramaiah Layout in Amar Ward No.03 of Yelahanka Satellite Town Sub Division, BBMP, Bangalore.
Reference	:	BBMP/AEE/YSSD/445/2013-14
Date of Test	:	03.05.2014
Technical Reference	:	IS: 1786-2008

Sl. No	Nominal size (dia) (mm)	Mass per metre (Kg/mtr)	TENSILE STRENGTH			Bend Test	Rebend Test
			0.20% proof stress/Yield stress N/mm²	Tensile strength (Ultimate stress) N/mm²	Elongation percent gauge length		
1	8	0.40	510	552	13.05	O.K	O.K

Note:

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Job No : CICE/BBMP/W.No.03/KRIDL/STEEL/2013-14 03.05.2014

TEST REPORT ON REINFORCEMENT STEEL

Client	:	Asst. Executive Engineer, Yelahanka Satellite Town Sub Division, BBMP, Bangalore.
Agency	:	Technical Manager (West), KRIDL, Bangalore.
Name of the Work	:	Improvements to Main and Cross Roads, Construction of drains in G. Ramaiah Layout in Attur Ward No.03 of Yelahanka Satellite Town Sub Division, BBMP, Bangalore.
Reference	:	BBMP/AEE/YSSD/445/2013-14
Date of Test	:	03.05.2014
Technical Reference	:	IS: 1786-2008

Sl. No	Nominal size (dia) (mm)	Mass per metre (Kg/mtr)	TENSILE STRENGTH			Bend Test	Rebend Test
			0.20% proof stress/Yield stress N/mm²	Tensile strength (Ultimate stress) N/mm²	Elongation percent gauge length		
1	10	0.62	513	556	13.35	O.K	O.K

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Job No.: CTCE/BBMP/W.No.03/KRIDL/CUBE/2013-14 12.06.2014

TEST REPORT ON CONCRETE CUBES

Clear	: Asst. Executive Engineer, Yelahanka Satellite Town Sub Division, BBMP, Bangalore.
Agency	: Technical Manager (West), KRIDL, Bangalore.
Name of the work	: Improvements to Main and Cross Roads, Construction of drains in G. Ramaiah Layout in Attur Ward No.03 of Yelahanka Satellite Town Sub Division, BBMP, Bangalore.
Reference	: BBMP/AEE/YSSD/445/2013-14
Sample ID	: Cement Concrete
Size of cubes	: 150mmx150mmx150mm
Cross Sectional Area	: 22500 mm^2
Technical Reference	: IS: 516-1959 (Reaffirmed 2008)
Grade of Concrete	: M_{25}
Compressive Strength as on	: 28^{th} day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	15.05.2014	12.06.2014	8.152	478.2	21.25
2	15.05.2014	12.06.2014	8.236	486.5	21.62
3	15.05.2014	12.06.2014	8.398	503.2	22.36

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Lab No: CTCE/BBMP/W.No.05/KRIDL/WMM/Gradation/2013-14

10.05.2014

GRADATION FOR WMM
MORTH TABLE-400-II

Client : Asst. Executive Engineer, Yelahanka Satellite Town Sub Division, BBMP, Bangalore.

Agency : Technical Manager (West), KRIDL, Bangalore.

Name of Work : Improvements to Main and Cross Roads, Construction of drains in G. Ramaiah Layout in Amur Ward No.05 of Yelahanka Satellite Town Sub Division, BBMP, Bangalore.

Reference : BBMP/AEE/YSSD/445/2013-14

Date of Testing : 10.05.2014

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **26100**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	935	935	3.6	96.4	95-100
22.4	5435	6370	24.4	75.6	60-80
11.2	5200	11570	44.3	55.7	40-60
4.75	4250	15820	60.6	39.4	25-40
2.36	3910	19730	75.6	24.4	15-30
0.600	2685	22415	85.9	14.1	8-22
0.075	2705	25120	96.2	3.8	0-8

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Job No.: CTCE/BBMP/WNo.03/KRIDL/BM/Bitumen/2013-14 28.05.2014

BITUMEN CONTENT DETERMINATION OF BITUMINOUS MACADAM MIX

AASHTO T 164

CLIENT	Asst. Executive Engineer, Yelahanka Satellite Town Sub Division, BBMP, Bangalore.
AGENCY	Technical Manager (West), KRIDL, Bangalore.
NAME OF THE WORK	Improvements to Main and Cross Roads, Construction of drains in G. Ramaiah Layout in Attur Ward No.03 of Yelahanka Satellite Town Sub Division, BBMP, Bangalore.
REFERENCE	BBMP/AEE/YSSD/445/2013-14
SAMPLE I/D	Road in G. Ramaiah Layout in Attur Ward No.03,BBMP, Bangalore.
DATE OF TESTING	28.05.2014

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	482	482
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	18	18.00
7. Bitumen content in %	3.60	3.60
8. Average	3.60	

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BITUMEN CONTENT GRADATION DETERMINATION OF BITUMINOUS MACADAM MIX

AASHTO T 30

CLIENT	Asst. Executive Engineer, Yelahanka Satellite Town Sub Division, BBMP, Bangalore.
AGENCY	Technical Manager (West), KRIDL, Bangalore.
NAME OF THE WORK	Improvements to Main and Cross Roads, Construction of drains in G. Ramaiah Layout in Attur Ward No.03 of Yelahanka Satellite Town Sub Division, BBMP, Bangalore.
REFERENCE	BBMP/AEE/YSSD/445/2013-14
SAMPLE I/D	Road in G. Ramaiah Layout in Attur Ward No.03,BBMP, Bangalore.
DATE OF TESTING	28.05.2014

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-04 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
26.5	0	0	0	100	100
19	25.32	5.25	5.25	94.75	90-100
13.2	93.12	19.32	24.57	75.42	56-88
4.75	261.2	54.19	78.76	21.24	16-36
2.36	65.3	13.55	92.31	7.69	4-19
0.3	13.26	2.75	95.06	4.94	2-10
0.075	4.25	0.88	95.94	4.06	0-8

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-04 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
26.5	0	0	0	100	100
19	27.15	5.63	5.63	94.37	90-100
13.2	92.25	19.14	24.77	75.23	56-88
4.75	262.3	54.42	79.19	20.81	16-36
2.36	63.12	13.10	92.29	7.71	4-19
0.3	22.12	4.59	96.88	3.12	2-10
0.075	3.26	0.68	97.55	2.45	0-8

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Job No.: CTCE/BBMP/W.No.03/KRIDL/BC/Bitumen/2013-14 30.05.2014

BITUMEN CONTENT DETERMINATION OF BITUMINOUS CONCRETE MIX

As Per IRC:SP:11-1984

CLIENT	Asst. Executive Engineer, Yelahanka Satellite Town Sub Division, BBMP, Bangalore.
AGENCY	Technical Manager (West), KRIDL, Bangalore.
NAME OF THE WORK	Improvements to Main and Cross Roads, Construction of drains in G. Ramaiah Layout in Amur Ward No.03 of Yelahanka Satellite Town Sub Division, BBMP, Bangalore.
REFERENCE	BBMP/AEE/YSSD/445/2013-14
SAMPLE I/D	Road in G. Ramaiah Layout in Amur Ward No.03,BBMP, Bangalore.
DATE OF TESTING	30.05.2014

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	474	474
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	26	26.00
7. Bitumen content in %	5.20	5.20
8. Average	5.20	

Notes:

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Lab No : CTCE/BBMP/W.No.03/KRIDL/BC/Bitumen/2013-14 30.05.2014

GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

As Per IS 2386 and IRC:SP:11-1984

CLIENT	Asst. Executive Engineer, Yelahanka Satellite Town Sub Division, BBMP, Bangalore.
AGENCY	Technical Manager (West), KRIDL, Bangalore.
NAME OF THE WORK	Improvements to Main and Cross Roads, Construction of drains in G. Ramaiah Layout in Attur Ward No.03 of Yelahanka Satellite Town Sub Division, BBMP, Bangalore.
REFERENCE	BBMP/AEE/YSSD/445/2013-14
SAMPLE I/D	Road in G. Ramaiah Layout in Attur Ward No.03,BBMP, Bangalore.
DATE OF TESTING	30.05.2014

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-18 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	48.22	9.75	9.75	90.25	79-100
9.5	33.25	7.01	16.77	83.23	70-88
4.75	83.22	17.56	34.32	65.68	53-71
2.36	90.22	19.03	53.36	46.64	42-58
1.18	42.58	8.98	62.34	37.66	34-48
0.6	32.15	6.78	69.12	30.88	26-38
0.3	28.15	5.94	75.06	24.94	18-28
0.15	39.64	8.36	83.42	16.58	12-20
0.075	50.26	10.60	94.03	5.97	4-10

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-18 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	52.64	11.11	11.11	88.89	79-100
9.5	33.21	7.01	18.11	81.89	70-88
4.75	73.22	15.45	33.56	66.44	53-71
2.36	95.65	20.18	53.74	46.26	42-58
1.18	40.58	8.56	62.30	37.70	34-48
0.6	35.24	7.43	69.73	30.27	26-38
0.3	26.51	5.59	75.33	24.67	18-28
0.15	35.24	7.43	82.76	17.24	12-20
0.075	52.65	11.11	93.87	6.13	4-10

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